

NEW GENERA AND SPECIES OF AMERICAN HOMOPTERA.

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Fam. JASSIDAE.

SCAPHOIDEUS. New genus.

Form of *Phlepsius lucerdæ* Sigt. Head triangular, flat above, vertex almost as long as the width between the eyes, subacuminate at tip, the base deeply sinuated; front longer than wide, deltoid, with the sides near the tip moderately curved, tylus liguliform; cheeks broad, curved, expanded to behind the middle of the eye, acutely tapering at tip and hardly enclosing the entire lora, the lora diagonal, acute at each end. Antennae long and slender. Pronotum sublunate, more curved anteriorly than sinuated posteriorly. Wing-covers moderately narrow, longer than the abdomen, curved, valvate, the costal areole long, narrow, destitute of cross-veins, followed by a gradually widening cell, beyond this are four apical cells of large size and mostly broad triangular figure; wings with the two apical middle areoles long and narrow, narrowing at base towards the cross-vein. Abdomen moderately long and narrow.

The name of this genus has reference to the somewhat shovel-shaped figure of the head. It comes very near in form and venation to some European species of the genus *Platymetopius*, as restricted by Fieber, which have the short head. Our genus, however, lacks the two minute cells at the apex of the costal areole, and has longer falcate genae which hardly reach around the tip of the lora. The eyes are also of the triangular diagonal type, extending well back on the curved sides of the pronotum.

1. *S. immistus*.

Jassus immistus Say, Jour. Acad. Philad. VI, p. 306. This is a very common and variable species, widely distributed throughout the eastern United States, from Maine to Florida, and from Ontario, Canada, all the way to central Texas. In Maryland it occurs on oak bushes during August and September.

2. *S. intricatus*. New sp.

Form of *S. immistus*, ivory white or yellowish, with the interior margin of the head more thickened than in that species, and the submargin destitute of the slender line; vertex conspicuously white, with a diagonal pale brown callous streak over the antennae; front obsoletely striated above; antennae piceous, testaceous at base. Pronotum with a few indistinct brown points across the anterior portion, and some cloudy spots near the base. Scutellum pale yellow, with a brown spot, or spots, on the basal part of the disk, but sometimes without spots. Beneath and legs white, the tarsal nails black, posterior tibiae brown at tip and with black dots at the base of the spines, a wide black band covers the middle joint of posterior tarsi. Wing-covers whitish hyaline, with a large fulvous spot on the middle of the clavus, on which is placed a diagonal large brown comma; on the corium, exterior to these, is a large irregular dark brown, double streak, followed behind by a white spot, next the nodus is a cuneiform dark brown spot, connected with the brown veins of the discal and apical areoles, the two areoles next behind this white, followed by a broad fulvous patch across most of the membrane, the apex with a large dark brown spot next the white apical margin.

Length to end of abdomen 5 millims; to tip of wing-covers $5\frac{1}{2}$ –6 millims. Width of pronotum $1\frac{1}{2}$ – $1\frac{3}{4}$ millims.

This has hitherto appeared as a more uncommon species than any one of the others here enumerated. It lives on *Crataegus* bushes, and may be obtained in the adult stage from the early part of August until the middle of October, in sheltered places. I have taken specimens in the Piedmont region of Maryland and Virginia in September and October, and on the Atlantic Coastal plain in Maryland and New Jersey in August. The ivory white color of the head and pronotum contrasting with the chestnut brown markings of the wing-covers gives it a very conspicuous and attractive appearance during life. It has occurred to me only in single specimens at a time on the bushes which it inhabits.

3. *S. jucundus*. New sp.

A beautiful tawny-yellow species, with semi-transparent wing-covers having a tinge of yellow, especially near the inner and

apical border, and with oblong deeper yellow spots in the large areoles on and beyond the middle; the tawny clavus is interrupted by a longitudinal series of three or four white spots, and the base of the apical series of areoles has a group of four round whitish spots; postnodal areole oblong, with an oblique vein at base and a curved one at tip; the central apical areole largest, triangular, with the inner narrow end truncated, the apical areole next the postnodal one five-angled, placed transversely; the apical inner areole bounded inwardly by a brown vein with a paler arrest on the middle, discoidal medial areole bounded at base and tip by dark brown veinlets, as also the postnodal and the apical cell next beyond it. Head pale testaceous, unspotted beneath, marked with two large orange spots above, and more or less interrupted with orange around the borders, the middle with a sharply defined white line, anterior margin a little recurved, bounded by a slender black line which is interrupted in the middle, and with another, complete, black line just below the margin, and crossing the eyes in the dead insect. Antennae piceous, testaceous at base. Pronotum suffused with orange, having a transverse curved series of four or more white spots before the impressed curved line, and with three pale longitudinal lines behind this area, a whitish spot appears before the humeral angle, and the lateral and posterior margins also white. Scutellum tawny with the lateral margins interrupted ivory white, and with a series of white spots each side of the middle. Underside of the entire body whitish testaceous. Legs pale testaceous, spines of the posterior tibiae placed on black dots, apex of each tarsal joint and also the nails black. Veins of wings dark piceous.

Length to end of abdomen ♂ 5 ♀ $5\frac{1}{2}$ millims; to tip of wing-covers $5\frac{1}{2}$ – $6\frac{1}{2}$ millims. Width of pronotum $1\frac{1}{2}$ millims.

This little beauty is quite variable in depth and amount of color, and also in pattern of markings. The female sometimes has a double series of white spots on the clavus, and various other rounded white spots scattered over the corium. A vividly colored variety has the vertex bright orange with a wide white band across the base, and also with the pronotum of the same orange color, crossed by a pale band,

4. *S. consors*. New sp.

Dull pale clay brown, inscribed with white and fuscous, form of *S. immistus*, but with less acute vertex. Head more rounded than in the preceding species, the vertex less depressed, having a yellow sinuous line adjoining the anterior margin bordered before by a slender line, and behind by a black line which is enlarged at the corner of the eye; next the apex is a dusky spot carrying a yellow dot, behind which a yellow double line runs back to the base and then bends outward in a hook; front pale brownish, darker above, where it is crossed by three or four yellowish lines. Eyes pale brownish, margined behind with white. Pronotum pale grayish brown, transversely wrinkled, with an obsolete pale middle line which is widened at the posterior extremity; in each anterior angle is a large yellowish spot, carrying a dark brown dot, the anterior margin orange with two yellow dots on the middle. Scutellum orange yellow, finely wrinkled, having two yellow remote dots at base, two gemmate ones near the apex, and the lateral margin interruptedly yellow. Beneath and legs testaceous. Apex of last tarsal joint, nails, dots at base of spines on posterior tibiae, tip of the same tibiae, and two broad tarsal bands black. Wing-covers tinged with pale fulvous and with whitish round spots distributed lengthwise on the corium, veins brown, the basal and apical cross-vein of the postnodal cell, that of the tip of adjoining apical cell, a streak at the marginal end of the sectors on the clavus, and tip of clavus dark brown; apical end of membrane broadly bordered with smoke brown, a few pale brownish clouds occupy the disks of the areoles on the middle. Wings hyaline, with brown veins. Segments of the tergum light brown, with the sutural margins, especially below, bright yellow.

Length to tip of wing-covers $5\frac{1}{4}$ – $5\frac{3}{4}$ millims; to end of venter $4\frac{3}{4}$ millims. Width of pronotum $1\frac{1}{2}$ millims.

A novel little species, of which but a few specimens have thus far occurred to me in Maryland. It lives on the Spice bush, *Linderus benzoin*, in late summer and autumn. A specimen of the female was sent to me from Waco, Texas, by Mr. Belfrage.

Fam. ISSIDAE.

DYCTIDEA. New genus.

Oblong, subelliptical, wing-covers carried almost horizontal, partly opaque. Head subquadrangular, the vertex transverse, arcuated, sunken, very short, separated from the front by a high carina; front subquadrangular, emarginated below, elevated above the line of the eyes, the medial carina pubescent, and higher than those of the lateral margins, the superior carina arcuated; epistoma prominently convex. Pronotum transverse, lunate, the anterior margin carinated and curved far forward, more than half way to the anterior line of the eyes. Eyes lateral, prominent, hemispherical. Antennae with the basal joint thick, cylindrical, about half as long as the eye, the second joint very short and thin, carrying a long slender bristle. Scutellum triangular, wider than long, with three incomplete thick carinae. Wing-covers oblong, net-veined over most of the surface, with the costal margin nearly straight, and continuous with a flat cross-veined border which is carried all the way around the membrane, and from thence to the base of the clavus; the costal area long, narrow, and crossed by remotely placed veinlets, veins of the membrane coarse, oblique, with reticulate branches. Legs stout, the posterior pair long, with strongly keeled posterior tibiae carrying three or four spines on the outer edge and a chaplet of smaller ones at tip, posterior tarsi broad, depressed, the two inner joints armed with a spine each side at tip. Abdomen compressed above, rounded beneath.

1. *D. angustata*. New sp.

Oblong, parallel-sided above, dull blackish piceous, greenish on the sternal segments and upper part of front. Face smooth, margined with testaceous, the middle carina pale at both extremities, and the vertex with a pale impression on the middle. Eyes dark brown slenderly edged with testaceous. Epistoma and rostrum brown-piceous. Pronotum somewhat uneven, depressed, bordered with and having the middle line testaceous. Scutellum more or less bordered with testaceous, and pale at tip. Sternum and venter greenish, with some dark vestiges on the middle of the segments. Legs pale piceous, paler on the

knees and tarsal joints. Wing-covers opaque, black, with the costal area and expanded border unevenly spotted with white or testaceous, the inner border, sutures, and some minute dots on the longitudinal veins pale brown. Tergum brown, with a pale streak on the middle and subcarinate line. ♂ ♀.

Length to tip of wing-covers ♂ $4\frac{1}{2}$ millims, ♀ 5 millims; to tip of venter $4-4\frac{1}{2}$ millims. Width of pronotum $1\frac{1}{2}-1\frac{3}{4}$ millim.

A pair of these curious little insects were sent to me from Los Angeles by Mr. Coquillett. The genus resembles in form the more delicate *Aphelonema*, but it belongs to that part of the group which approaches *Tylana* in the reticulated arrangement of its venation, and the composition of its pectoral and abdominal areas. The pronotum of the female is a broad crescent projecting forwards in a well-rounded curve, while that of the male is more angular in front.

2. *D. intermedia*. New sp.

Somewhat more robust than the preceding species, with the wing-covers a little convex behind the middle. Face pale greenish brown, becoming fuscous along the sides and on the end of the epistoma, superior cheeks and all of the pectus beneath the upper border yellowish green. Pronotum more blunt than in the preceding species, in the ♀ almost truncate on the apical portion of the anterior margin, and on the middle of this indented, the raised lines darker than the general brownish surface. Scutellum pale brown, darker on the disk and middle carina. Legs dark brown, pale on the base and apex of the femora. Wing-covers black-piceous, with a large hyaline triangular spot spreading across the clavus upon the adjoining cellules, a band of the same color crosses the corium behind the tip of clavus, and a similarly colored spot curves near the inner part of the membrane, the veins all dark brown, and the flattened border all around the wing-cover interruptedly brown and hyaline. Tergum dull brown, with series of pale brown spots along the sides, and a subcarinate interrupted line of the same color along the middle; venter yellowish, dark brown on the apical segment. Length to tip of wing-covers 5-6 millims; to end of venter $4\frac{1}{2}-5$ millims. Width of base of pronotum $1\frac{3}{4}$ millim.

Three females from the vicinity of Los Angeles were sent to me by Mr. Coquillett for examination and study.

DICTYOBIA. New genus.

Form similar to *Neaethus*, having the wing-covers sloping, broad, and subangulately expanded before the middle, ramosely reticulate, with the areoles large and irregular. Head narrower than the pronotum, the vertex carinated in front and on the sides, posterior margin broadly sinuated, front quadrangular, carinate on the middle line and superior and lateral margins, sinuated below, almost truncated above. Pronotum short, lunate, somewhat sunken, with the margins a little reflexed. Scutellum hardly as wide as the pronotum, obsoletely carinate on the middle, and with an ovate callosity next each basal angle. Legs stout, with the tibiae keeled and spined as in the preceding genus, the posterior tarsi flattened, and with a spine at the outer angle of the two basal joints. Wing-covers more broadly margined all around than in *Dictylea*, with the cells of the apex, exteriorly, much longer than the rest, basal area of the clavus crossed by a single veinlet, the principal area crossed by five veinlets, of which the three apical ones form a group by themselves. Abdomen stout, subconical, almost carinate above, compressed at the posterior end.

D. permutata. New sp.

Obmitrate,* fuscous, or fusco-piceous, marked with testaceous. Head broad, truncated, moderately polished, with the carinate lines and space beneath the eyes more or less pale; eyes brown; antennae piceous, having the border of the socket well raised, the basal joint almost spherically enlarged at tip, the second joint very short and narrow, and the apex consisting of a long, slender bristle; vertex sunken, having the middle line, lateral and posterior margins testaceous. Pronotum with the anterior margin testaceous, slenderly recurved, the middle line also testaceous, percurrent with the line on the head, and also with that on the scutellum, the surface each side of middle indented. Scutellum with a dark brown callosity on each basal

* This term is here used for a figure in the form of a mitre, in the reversed direction.

angle, set on a paler spot. Pleural pieces fuscous, bordered with pale yellow, the sternal segments and coxae greenish yellow. Legs piceous, minutely pubescent, pale yellow on the knees, tip of tibiae and tarsi. Wing-covers blackish piceous, with a large hyaline spot at the basal inner angle, a hyaline band, widening exteriorly, behind the middle, a shorter band of like color next the tip of membrane, and the marginal expanded border likewise hyaline with the cross veins mostly invaded by brown stains; veins dark brown, but generally paler, or interrupted with pale piceous where crossing the pale bands. Ventral segments more or less widely bordered with greenish yellow, tergum with a yellow dorsal line of interrupted marks and with series of obscure spots each side.

Length to tip of wing-covers ♀ 5, 6 millims. To tip of venter ♀ $4\frac{1}{2}$ –5 millims. Width of pronotum 2 millims.

Five specimens have thus far passed through my hands, and most of these were captured by Mr. Coquillett in the vicinity of Los Angeles, Cal. A single specimen, labelled simply California, was sent to me by Mr. Henry Edwards.

I have failed to observe wings in any of the foregoing genera or species.

Dictyonia. New genus.

Blunt and wide; wing-covers transparent, carried almost vertical, as long as broad, flat, wide, ovoid, with exceptionally few and large areoles. Head blunt, subtruncate, set so deeply that the eyes almost touch the base of the wing-covers; vertex transverse, very short, carinate on the anterior margin, the posterior margin more prominently carinate and broadly sinuated, surface sunken, indented each side; front a little curved, middle line with a blunt carina, and the lateral margins distinctly carinate, inferior margin deeply sinuated, the epistoma strongly convex. Pronotum bluntly lunate, depressed, a little longer than the vertex, enclosed each side by the eyes. Scutellum short, triangular, somewhat sinuated each side. Tibiae grooved and carinate edged as in *Necaethrus*, the posterior pair with spines exteriorly, and the posterior tarsi depressed, with the angles of the two basal joints produced into spines. Wing-

covers margined all around with a very narrow border, crossed by divaricating veinlets which form groups at the ends of the apical veins, veins coarse, basal areole oblong quadrangular, with the ends oblique, followed behind by two small angular cells, behind which are two very large irregular areoles, followed by the transverse series of six areoles, the two middle ones of which are the largest of all and irregularly quadrangular in form, the apical series consisting of six or seven cells, graduating smaller towards the inner margin of the wing-cover.

D. obscura. New sp.

Form as seen from the side broad ovate, with the transverse diameter almost equal to the longitudinal. Color very pale brownish yellow, marked with brown. Face margined with pale brown, which continues upon the vertex in a line adjoining the eyes, medial carina prominent, bright yellow, becoming narrower above and ending in a minute point at the vertex; eyes brown, prominent, subglobose, set in a wide orbit which is brown behind; rostrum pale brown. Pronotum pale yellow, brownish on the sides, the anterior margin narrowly recurved and carried far forward on the head, with a curved impression, carrying two indented points just back of the border. Scutellum broad, bluntly triangular, deeply impressed near each basal angle, the angle broad, tabulate, brownish. Wing-covers broadly, unevenly spread with brown on the apical division, with a large oblique spot of the same color near the base, and with a few blackish points on the apical and costal raised edge. Beneath pale yellow, polished. Legs pale yellow, with a brown mark on the coxae and base of femora, and the tips of tibiae and tarsi darker brown. Length to end of wing-covers, $3\frac{1}{2}$ –4 millims; to end of abdomen, 3 millims. Width of pronotum, 1 millim. This abnormal and curious insect has thus far been obtained only in Central California and near San Francisco. One specimen was given to me by Mr. Henry Edwards, and another was captured by James Behrens. It bears some resemblance to *Neaethus* Stal, but differs widely from that genus in the reduced number of its areoles and their exaggerated proportions on the central portion of the wing-cover.

DANEPTERYX. New genus.

Body robust, as in *Issus* and *Tylana*, but with narrow, strap-shaped wing-covers and contracted angulate head, which give the insect the appearance of the Orthopterous genus *Tettix*. Vertex oblong quadrangular, with the anterior angles acutely prominent, and the front margin between them almost angulate; the middle line broadly sunken, lateral margins carinately elevated; front oblong, with the sides and middle line prominently carinate, emarginate above and below; clypeus convex, conical, carinate on the middle line, the labrum completing the cone, and stiffened each side by a thick carinate rib extending along from the cheek; rostrum long, and at base nearly equal to the labrum in thickness; antennae globose at base, placed as usual below the eye, and carrying a very slender seta; eyes subglobular, emarginate beneath. Pronotum transverse, short, depressed on the disk, the anterior angle subacute, with the sides narrow, curved downward, with a tabulated space behind the eyes, and the upper surface crossed by five slender, longitudinal lines. Legs normal, the femora moderately compressed; posterior tibiae prismatic, carrying a series of four or five teeth besides the chaplet of spines at tip. Wing-covers thick, opaque, subligulate, but triangularly widened at base, and tapering at tip where they become acutely rounded; the elements of venation are arranged in continuous longitudinal series, excepting two short series of cells which run from the base along and parallel with the clavus; the areoles are all small, numerous, mostly quadrangular on the outer half of the length of the wing-cover, while those of the inner half are irregular, because of the ramose irregularities of the longitudinal veinlets; the costal border crossed by numerous veinlets. Wings rudimentary. Scutellum triangular, carinate, acute at tip. Abdomen obese, carinated above.

D. manca. New species.

Grayish fuscous, pubescent, tinged with white, pale yellowish brown when immature. Upper surface and wing-covers scabrous. Head rough, a little hairy, the carinate lines blackish, interrupted with white; lower part of cheeks and epistoma

pale testaceous. Legs and tarsi spotted with fuscous. Pronotum a little pale about the margins. Pectus hairy, unevenly fuscous, marked with a white spot above the orifice of the mesothoracic spiracle. Underside chiefly paler than above, sometimes testaceous, or white on the posterior coxae. Wing-covers ashen gray, with chiefly black veins, the veins of the costal and inner border coarsely interrupted with white, while those of the discal portion are minutely specked with white. Anal and genital segments more or less rusty yellow. Length to tip of wing-covers, $4\frac{1}{4}$ –5 millims; to end of venter, $3\frac{1}{2}$ – $4\frac{1}{2}$ millims; width of pronotum, $1\frac{3}{4}$ –2 millims. This insect has thus far been reported only from Los Angeles, California, from which place several specimens have been referred to me for examination by Mr. D. W. Coquillett.

It is the most remarkable insect of the order which has yet been discovered in North America. The wing-covers lack the membranal area which is so often present in the insects of this group, while the form of these organs and their type of venation lead to the Orthoptera of the group *Acrididae*, and thus give us an ancestral type which might well be a remnant of the old Fauna prevalent in the Rocky Mountain region during the Tertiary period.

CICADIDAE.

TIBICEN Latr.

T. cupreo-sparsa. New sp.

Form of *T. striatipes* Hald. Dull piceous black, the upper surface closely spread with minute brassy scales and short hairs, the under surface more closely silvery pubescent, including silvery scales on the pleurae and venter. Head normal, blunt-triangular, with the median line grooved as far as to the anterior ocellus, the latero-basal areas triangular, indented, and bounded next the ocelli by a curved sulcus; vertex separated from the front by a transverse impressed line, which terminates in an oval impression behind each antennal lobe, base of upper part of front orange yellow, the front blunter and more convex than in *T. striatipes*, bordered with orange, and deeply grooved on

the middle line, antennal lobes broad triangular, with a curved, short, carinate median border; inferior cheeks and labrum black, hoary pubescent, rostrum piceous, somewhat yellow at base; antennae steel blue-black. Pronotum transverse, with the anterior and posterior margins yellow, and the lateral margins oblique, recurved as far as to the shallow notch before the moderately produced humeral angles, base of the humeral angles with a forked wrinkle; anterior angles bluntly rounded; the mesonotum rather evenly convex, covered like the adjoining segments with bronze scales, the base with a short yellow streak each side; mesothoracic cross yellow, with black, long, acute arms, bounded in front by a wide depression, and with the posterior excavation wide and shallow, the area behind the cross yellow; pleural segments pellicular, testaceous, piceous on the middle, hoary pubescent; acetabular processes of the hind legs long, auriculate, white; opercula small, transverse, pediform. Legs piceous, hoary pubescent, more or less orange on the sutures, tibiae and undersides of the middle and posterior femora. Hemelytra piceous, opaque as far as to the first series of transverse veins, which form a curve of a pale color across the entire width; areoles wide, veins stout, black, the opaque area spread with minute bronze scales and pubescence, the costal margin and exterior vein of the basal areole pale yellow, the radial areole long, acute at tip; base of both wing-covers and wings orange, the membrane hyaline, tinged with brown; wings slightly tinged with brown, and with black veins. Venter piceous, silvery pubescent, the posterior and lateral margins of the segments rufous. Length to end of venter 14-15 millims; to tip of wing-covers 18 millims. Alar expanse 36 millims. Breadth of base of pronotum 6-6 $\frac{1}{4}$ millims. Two females are the only representatives of the species thus far known. They were captured near Los Angeles, California, and were sent to me for identification by Mr. D. W. Coquillett. The male is still a *desideratum*, which it would be particularly important to secure, as the forms of the genital pieces and sonory segments of this sex afford important structural characters.